

# **CARBON MONOXIDE REPORT RESPONSE PROCEDURES "DRAFT"**

## **1. INTRODUCTION**

This procedure identifies the recommended actions that should be taken when either customer comments or employee observations indicate the possible presence of carbon monoxide (CO).

## **2. GENERAL**

Carbon monoxide is a colorless, odorless, and highly toxic gas that is produced by incomplete combustion. Its common chemical denotation is "CO". It is also a combustible gas with limits of flammability from 12.5% lower explosive limit (LEL) to 74% upper explosive limit (UEL) - It is important to remember that from a toxicity standpoint, CO is deadly long before it reaches the combustible range.

## **3. CLASSIFICATION OF SERVICE REQUEST**

Individual circumstances will determine priority since service calls related to CO will vary extensively as to urgency and description. Each request for service should be classified as; (1) Emergency Request, (2) Non-Emergency Request or (3) Routine CO check, and then acted upon as described below.

## **4. PROCEDURES FOR EMERGENCY REQUEST**

A service request should be classified as an EMERGENCY if any of the following occur.

(a) Request for service from a public agency (i. e. fire, police, rescue, housing or code enforcement) indicating that a customer requires medical attention, hospitalization or a death has occurred.

(b) Request for service from a customer when the CO detection device alarms and customer indicates medical symptoms consistent with CO poisoning such as nausea, dizziness, headache, fatigue, or other flu-like symptoms.

The following procedures shall be performed for EMERGENCY requests.

(a) If there is no public agency at the premise, then advise customer to provide immediate ventilation by opening doors and windows and leave the dwelling as soon as possible.

(b) If there is no public agency at the premise and the customer indicates an occupant is or becomes unconscious, then company employee shall immediately call 911.

(c) In all cases, respond according to Gas Safety Work Flow diagram for emergency requests (see Exhibit A).

(d) Operations Supervisor, or their designee, should accompany field service representative when condition results in hospitalization and/or death.

(e) Perform Carbon Monoxide Investigation Procedures described in section 7 below.

(f) Collect as much information as possible at time of first response, including names of victims, CO test results and other data related to natural gas service. Work with the available public agencies to obtain this information when appropriate.

## **5. PROCEDURES FOR NON-EMERGENCY REQUEST**

A service request should be classified as a NON-EMERGENCY if:

(a) Request for service from a customer when a CO detection device alarms, and customer does not indicate any medical symptoms consistent with CO poisoning such as nausea, dizziness, headache, fatigue, or other flu-like symptoms.

The following procedures shall be performed for NON-EMERGENCY requests:

(a) If CO detector alarm sounds, advise customer to provide for immediate ventilation by opening doors and windows and refer customer to a certified gas appliance mechanic or contractor for evaluation of detector and appliances if alarm does not sound again.

(b) If CO detector alarm sounds again after ventilation, then advise customer to ventilate premise again and contact gas service supplier. Gas service supplier shall respond according to Procedures-for-EMERGENCY requests described in section 4.

## 6. PROCEDURES FOR ROUTINE CO CHECK

Customer requests for routine CO check of appliances typically result from news media coverage on the dangers of CO.

No field response is necessary. Customer should be advised to ensure CO detectors are working properly and to contact the Housing Office or Fire Department for guidance if they are uncertain how to perform this check.

## 7. PROCEDURES FOR CARBON MONOXIDE INVESTIGATION

(a) All cases of carbon monoxide incidents shall be documented with the CARBON MONOXIDE INCIDENT REPORT (see Exhibit B). Reports should be forwarded to the local Safety Office with a copy retained in the Housing Office.

(b) Either electronic instrument or stain tube type instruments shall be used to measure the CO level of concentration.

(c) Electronic instruments shall be zeroed in contaminant-free air prior to entering premise to conduct testing. Detector stain tubes should be used according to manufacturing expiration dates.

(d) Discuss the suspected CO problem with the customer if possible.

(e) Testing should be conducted to determine if a positive CO concentration level exists.

(f) Testing should be performed by allowing the gas appliance to either come to proper operating temperature or 10 to 15 minutes of normal operation.

(g) Testing should be taken in the center of the room where the appliance is located, then at a vent register or where otherwise appropriate. Testing should be avoided in flue pipes, chimneys, heat exchangers, range vents or other places that would invalidate the test. Testing should be performed in a smoke-free environment since smoking can generate CO concentrations as high as 20 PPM.

(h) Based upon your test results, the following actions should be taken:

### 9PPM OR LESS

If an atmospheric CO concentration inside the building is 9 parts per million (PPM) or less, then there is NO INDICATION OF CARBON MONOXIDE DANGER.

### 10PPM TO 35 PPM

If an atmospheric CO concentration inside the building is found to be between 10 PPM and 35 PPM, then proceed as follows:

(1) Attempt to identify the cause of the CO condition.

(2) If a faulty gas appliance(s) is identified, then valve off the appliance(s) and place a "Red Tag" warning notice.

(3) If the source of CO can not be determined, then service to the facility should be turned off at the motor and "Red Tagged". Customer should be advised of other possible sources of CO such as fuel oil furnaces, kerosene heaters, propane-fueled appliances and vehicle exhaust.

(4) The customer should be referred to the Housing Office or a gas contractor for correcting any faulty appliance(s).

#### 36 PPM TO 200 PPM

If an atmospheric CO concentration inside the building is found to be between 36 PPM and 200 PPM, then proceed as follows:

(1) Ventilate the premise and suggest the customer evacuate until the problem is resolved.

(2) Attempt to identify the cause of the CO condition.

(3) If a faulty gas appliance(s) is identified, then valve off the appliance(s) and place a "Red Tag" warning notice.

(4) If the source of CO can not be determined, then service to the facility should be turned off at the meter and "Red Tagged". Customer should be advised of other possible sources of CO such as fuel oil furnaces, kerosene heaters, propane-fueled appliances and vehicle exhaust.

(5) The customer should be referred to the Housing Office or a gas contractor for correcting any faulty appliance(s).

#### 201 PPM TO 400 PPM

If an atmospheric CO concentration inside the building is found to be between 201 PPM and 400 PPM, then proceed as follows:

(1) Evacuate all occupants from the building. If occupants refuse to leave, then immediately notify your supervisor.

(2) Ventilate the premise as appropriate.

(3) Contact your supervisor for assistance.

(4) Do not re-enter the premise until the CO concentration level is below 200 PPM.

(5) When appropriate, attempt to identify the cause of the CO condition.

(6) If a faulty gas appliance(s) is identified, then valve off the appliance(s) and place a "Red Tag" warning notice.

(7) If the source of CO can not be determined, then service to the facility should be turned off at the meter and "Red Tagged". Customer should be advised of other possible sources of CO such as fuel oil furnaces, kerosene heaters, propane-fueled appliances and vehicle exhaust.

(8) The customer should be referred to the Housing Office or a gas contractor for correcting any faulty appliance(s).

#### GREATER THAN 400 PPM

If an atmospheric CO concentration inside the building is found to be greater than 400 PPM, then proceed as follows.

(1) Leave the building immediately.

(2) Contact dispatch to call 911.

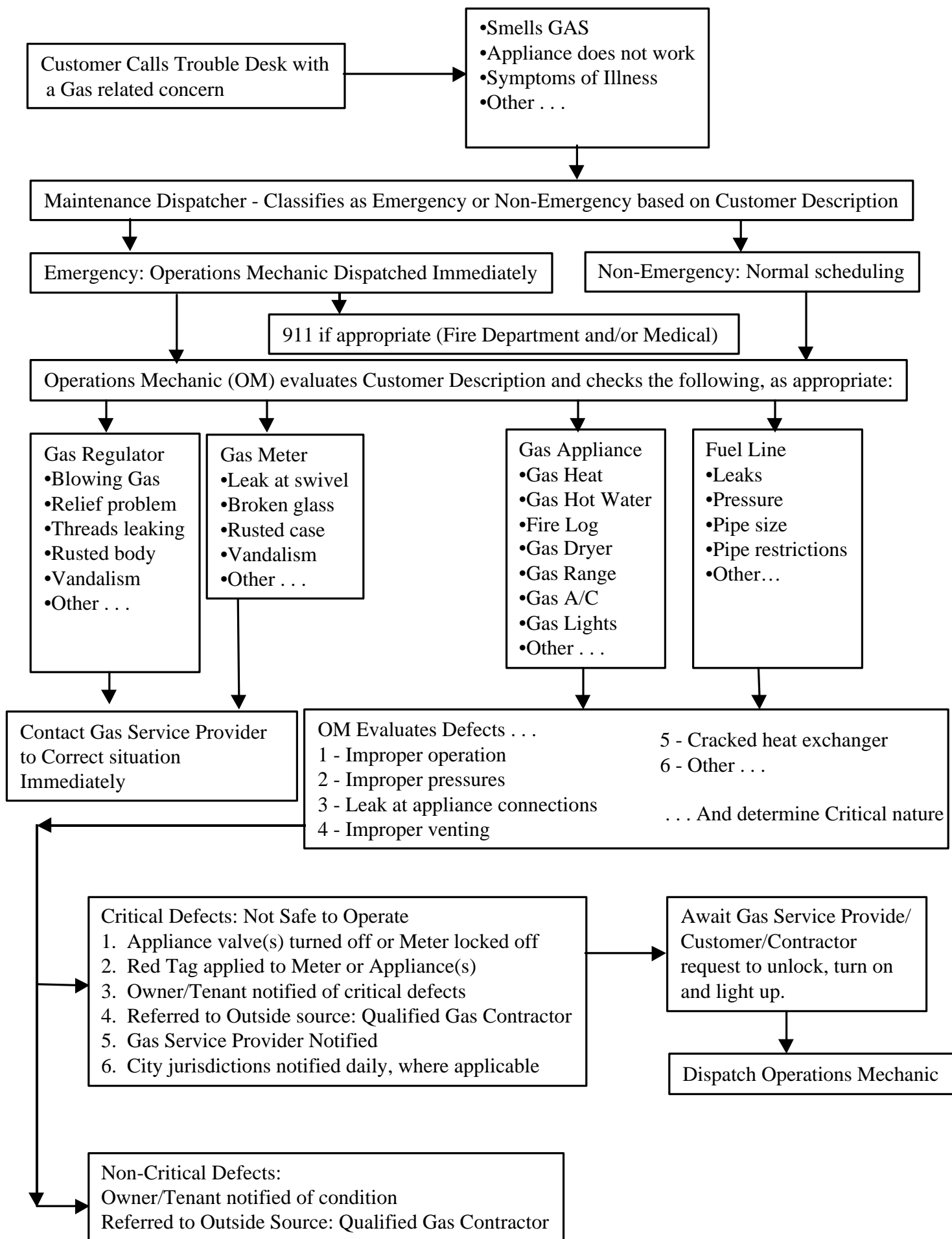
(3) Attempt to evacuate all occupants and ventilate the building from outside.

- (4) Shut off gas from outside if possible.
- (5) Contact your supervisor.
- (6) Do not re-enter the premise until the CO concentration level is below 200 PPM.
- (7) When appropriate, attempt to identify the cause of the CO condition.
- (8) If a faulty gas appliance(s) is identified, then valve off the appliance(s) and place a "Red Tag" warning notice.
- (9) If the source of CO can not be determined, then service to the facility should be turned off at the meter and "Red Tagged". Customer should be advised of other possible sources of CO such as fuel oil furnaces, kerosene heaters, propane fueled appliances and vehicle exhaust.
- (10) The customer should be referred to the Housing Office or a gas contractor for correcting any faulty appliance(s).

#### 8. MAINTENANCE AND CALIBRATION OF CO DETECTOR INSTRUMENTS

- (a) Instruments used for CO detection should be operated in accordance with manufacturers operating instructions.
- (b) Electronic instruments should be checked for proper calibrations at least once each month in accordance with manufacturer calibration instructions.
- (c) Electronic instruments should be calibrated after repair or replacement of parts.
- (d) Calibration of instruments should be documented and records retained in the appropriate office.

Carbon Monoxide/Natural Gas Safety Work Flow  
(Customer Initiated)



## CARBON MONOXIDE INCIDENT REPORT

*Follow Carbon Monoxide Response Procedures*

Date of Incident: \_\_\_\_\_ Time of Arrival: \_\_\_\_\_  
Service Address: \_\_\_\_\_ City: \_\_\_\_\_  
Customer Name: \_\_\_\_\_ Telephone No: \_\_\_\_\_

Were any of the following symptoms reported? ☐ None ☐ Nausea  
☐ Headache ☐ Dizziness ☐ Confusion ☐ Fatigue  
☐ Other physical symptoms \_\_\_\_\_

Do symptoms disappear when away from house or building? ☐ No ☐ Yes  
Did Fire Department or Rescue Squad respond? ☐ No ☐ Yes Station No: \_\_\_\_\_  
Was anyone hospitalized? ☐ No ☐ Yes (Record additional information on back.)

Was a CO detection device present? ☐ No ☐ Yes (Provide make, model & serial no.)  
☐ Kidde Nighthawk ☐ First Alert ☐ Other \_\_\_\_\_  
Model No: \_\_\_\_\_ Serial No: \_\_\_\_\_

### Results of Investigation

CO test instrument, Model No: \_\_\_\_\_ Serial No: \_\_\_\_\_  
Atmospheric CO concentration in building at first arrival: \_\_\_\_\_ PPM Time: \_\_\_\_\_  
(If CO concentration inside of building is greater than 200 PPM evacuate all occupants.)

If further investigation is necessary record all sampling locations and CO concentration levels:

<input type="checkbox"/> Gas Furnace _____ PPM	<input type="checkbox"/> Gas Logs _____ PPM
<input type="checkbox"/> Gas Water Heater _____ PPM	<input type="checkbox"/> Gas Range _____ PPM
<input type="checkbox"/> Gas Dryer _____ PPM	<input type="checkbox"/> Heat Duct Outlets _____ PPM
<input type="checkbox"/> Vehicle in Garage _____ PPM	
<input type="checkbox"/> Industrial Operation/Process _____ PPM	
<input type="checkbox"/> Other Location _____ PPM	

Describe probable cause of any CO emission: \_\_\_\_\_

Atmospheric CO concentration in building after investigation: \_\_\_\_\_ PPM Time: \_\_\_\_\_

Was this a false alarm from customer CO detection devise? ☐ Yes ☐ No

Was a customer appliance or meter red tagged? ☐ Yes ☐ No  
(If Yes, attach copy of Red Tag)

Investigated by: \_\_\_\_\_ Date: \_\_\_\_\_  
Print Name Employee Signature  
Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_  
Print Name Employee Signature

Additional comments about this incident by any employee may be written on the back.  
Report Distribution: Original to Safety; Copy retained in Housing Office.

### Information on People Hospitalized

1. Name: \_\_\_\_\_ Telephone No: \_\_\_\_\_  
Address: \_\_\_\_\_ City: \_\_\_\_\_  
State: \_\_\_\_\_ Zip: \_\_\_\_\_ Persons Age: \_\_\_\_\_ Sex: \_\_\_\_\_  
Name of Hospital: \_\_\_\_\_  
Was incident fatal? ☐ No ☐ Yes
2. Name: \_\_\_\_\_ Telephone No: \_\_\_\_\_  
Address: \_\_\_\_\_ City: \_\_\_\_\_  
State: \_\_\_\_\_ Zip: \_\_\_\_\_ Persons Age: \_\_\_\_\_ Sex: \_\_\_\_\_  
Name of Hospital: \_\_\_\_\_  
Was incident fatal? ☐ No ☐ Yes
3. Name: \_\_\_\_\_ Telephone No: \_\_\_\_\_  
Address: \_\_\_\_\_ City: \_\_\_\_\_  
State: \_\_\_\_\_ Zip: \_\_\_\_\_ Persons Age: \_\_\_\_\_ Sex: \_\_\_\_\_  
Name of Hospital: \_\_\_\_\_  
Was incident fatal? ☐ No ☐ Yes

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### Additional Comments

1. Comments: \_\_\_\_\_  
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Comments by: \_\_\_\_\_ Date: \_\_\_\_\_  
Print Name Employee Signature
2. Comments: \_\_\_\_\_  
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Comments by: \_\_\_\_\_ Date: \_\_\_\_\_  
Print Name Employee Signature
3. Comments: \_\_\_\_\_  
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Comments by: \_\_\_\_\_ Date: \_\_\_\_\_  
Print Name Employee Signature